

### REMARKS

Reconsideration of this application is respectfully requested in view of the foregoing amendment and the following remarks. Claims 5-30 and 32-35 are currently pending. Claims 5-31 are rejected. Claims 5, 7, 8, and 14 have been amended. Please note that the amendments to claims 5, 7, and 14 correct typographical errors. Claim 31 has been canceled without prejudice or disclaimer. Claims 32 –37 are added in this response. No new matter has been added.

#### Rejection of Claim 31 under 35 U.S.C. 112, first paragraph

The Examiner rejected claim 31 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner asserts that:

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 31 requires “side guides connecting with the projections”. It is unclear where in the specification the nose of the tape applicator head is described as including side guides connected with projections. It appears from the specification (Page 5, lines 10-14 and Page 10, lines 11-14) the side guides are the projections, and this is the interpretation given by the Examiner.

This rejection is moot in view of the cancellation of claim 31. Thus, the undersigned representative requests that this rejection be withdrawn.

#### Rejection of claims 5, 8, 9, 15, 20, and 21 under 35 USC § 102(b)

Claims 5, 8, 9, 15, 20, and 21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by a Publication from Plastics Engineering titled “R U Reinforcing plastics with robots?” by Ermert *et al.* (“Ermert”). Specifically, the Examiner asserts that:

Ermert et al. disclose a robotic tape applicator system capable of applying double-sided adhesive tape to a work piece (See page 3, the heading "Tape-laying", lines 1-14 and 23-31). Ermert et al. teach the **robot system comprises a computer**, i.e. the claimed computer means (See page 2, the heading "Figure 1", line 1), **a robotic arm** under the control of the computer having a **tape applicator head attachment**, i.e. the claimed tape applicator means (See page 3, the heading "Figure 4", line 1 and the "Tape laying tool" within Figure 4), and a **liquid applicator attachment**, i.e. the claimed activator applicator means capable of applying an activator liquid along a predetermined path prior to application of the tape (See page 1, the heading "Fiber spray up", lines 1-3 and the "Fiber spraying tool" within Figure 2 on page 2), and a **work table**, i.e. means to hold a work piece in registration with the tape applicator means (See page 2, the heading

"Figure 1", line 1 and the "Parts mounting table" within Figure 1). Ermert et al. teach the robotic arm **tape applicator head attachment comprises a roller**, i.e. the claimed roller capable of releasably storing two-sided adhesive tape it being noted the roller disclosed by Ermert et al. is the same as the roller described by applicants specification (See page 4, the heading "Figure 5", lines 1-3 and the "Tape feed roll" within Figure 5), a roll of pre-impregnated tape having an adhesive on both sides, i.e. a roll of two-sided adhesive tape (See page 3, the heading "Tape-laying", lines 1-5 and 23-25 wherein a two-side adhesive tape is clearly disclosed), a **guide means**, i.e. the claimed guide means to guide the tape to a tape applicator head (See Figure 5 and the deflection rolls (not labeled) between the "Tape feed roll" and "Tension rolls"), a **tensioning means**, i.e. the claimed tensioning means located between the roller and tape applicator nose capable of maintaining a uniform tension (See the "Tension rolls" within Figure 5), a **pneumatically press driven tape applicator nose** having a smooth radius the center point of which lies along a roll axis of the robotic arm, i.e. the claimed tape applicator nose capable of permitting reciprocal motion in a direction normal to the work piece and a pneumatic piston capable of applying pressure to the tape applicator nose (See page 3, the heading "Tape-laying", lines 28-30 and page 4, the heading "Figure 5", lines 1-3 and the "Pressure lay down roll" and "Roll-carrier movement" within Figure 5), and a **cutting means**, i.e. the claimed cutting means integral with the tape applicator head capable of cutting the tape under the control of the computer (See page 4, the heading "Figure 6", lines 1-4 and the "Cutting" within Figure 5). Ermert et al. teach the **computer may include a program** for operating the robotic arm and tape applicator head attachment (See page 4, the heading "Programming and tool changing", lines 1-11 and page 6, glossary definitions for Control, Servos, and Programming method), it being noted any program including data for the proposed path of the tape would intrinsically include data respecting the shape of the work piece such that the limitations in claim 5 regarding the programmed data are met.

The undersigned representative respectfully traverses the rejection of claims 5, 8, 9, 15, 20, and 21 under 35 U.S.C. §102(b) as being anticipated by Ermert *et al.* ("Ermert"). Regarding claim 5, Ermert does not disclose, *inter alia*, "A robotic tape applicator comprising: computer means which includes programmed data respecting the shape of the work piece and the proposed path of the tape to be adhered to the work piece; tape applicator means under the control of the computer means to apply the tape to the work piece along said path; and means to hold a work piece in registration with the tape applicator means" as recited in claim 5 of the present application. (emphasis added). Regarding the computer means, the Examiner asserts that

“Ermert et al. teach the computer may include a program for operating the robotic arm and tape applicator head attachment (See page 4, the heading “Programming and tool changing”, lines 1-11 and page 6, glossary definitions for Control, Servos, and Programming method), it being noted any program including data for the proposed path of the tape would intrinsically include data respecting the shape of the workpiece such that the limitations in claim 5 regarding the programmed data met.” These cited sections do not disclose a “computer means which includes programmed data respecting the shape of the work piece and the proposed path of the tape to be adhered to the work piece.” Programming a proposed path does not intrinsically include programming data respecting the shape of the work piece. The Office has a burden to prove anticipation of the claims. In order to maintain an anticipatory rejection under 35 U.S.C. §102, a reference must teach each and every element of the claim. *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference).

As recited in MPEP 2112, “The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic.” *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). “In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). The Office Action fails to provide a basis of fact and/or sufficient technical reasoning why a program that includes data for a proposed path for applying tape would intrinsically include data respecting the shape of the work piece. Therefore, the Office Action has not meet its burden of proof that Ermert anticipates claims 5 and 8 of the present application.

Since claim 8 includes a computer having “programmed data respecting the shape of the work piece and a proposed path of the tape to be adhered to the work piece,” claim 8 is patentable over Ermert for the same reasons recited above with respect to claim 5.

Accordingly, it is respectfully submitted that independent claims 5 and 8, and their dependent claims 6, 7, 9-30, and 32-37, respectively, are allowable over the cited reference. Hence, for at least these reasons, the undersigned representative respectfully requests that the rejection of claims 5, 8, 9, 15, 20, and 21 under 35 U.S.C. §102(b) be withdrawn.

**Rejection of claims 5, 8, 9, 15, 20, and 21 under 35 USC § 103(a)**

The undersigned representative respectfully traverses the rejection of claims 5, 8, 9, 15, 20, and 21 rejected under 35 U.S.C. § 103(a) as being unpatentable over Ermert in view of “Into the Future” by Milacron (“Milacron”). Specifically, the Examiner asserts that:

Ermert et al. is described in full detail above. As noted above, any program including data for the proposed path of the tape would intrinsically include data respecting the shape of the work piece such that the limitations in claim 5 regarding the programmed data appear to be met.

In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to operate the computer taught by Ermert et al. using a well known and conventional tape applicator program such as that suggested by Milacron which includes data respecting the shape of the work piece and the proposed path of the tape as only the expected results would be achieved, i.e. the computer means would operate according to programmed data respecting the shape of the work piece and the proposed path of the tape to be adhered to the work piece.

Milacron disclose a tape applicator system including a computer and a tape applicator head wherein the computer controls the tape applicator head through a known and conventional program, the program including data respecting the shape of the work piece and the proposed path of the tape (Pages 4-6 and 21; see in particular the software representation on page 5 clearly showing the programmed data includes data respecting the shape of the work piece and the proposed path of the tape).

Ermert discloses a robot which avoids “time-consuming and expensive programming” (Ermert, page 2, last sentence of first full paragraph). In describing the relevant movement between a pressure roller and the robot arm, Ermert recites “If the distance needs to be exceeded, say, for example, because of the shape of the part, the robot can make a corresponding correction

with the aid of a sensor that feels its way along the surface of the part. Thus, time-consuming and expensive programming is avoided.” (Ermert, page 2, last two sentences of first full paragraph). Thus, Ermert teaches the use of a sensor to avoid programming, thereby teaching away from programming the shape of a work piece as recited in claim 5 of the present application.

The Examiner asserts that Milacron teaches or suggests “computer means which includes programmed data respecting the shape of the work piece and the proposed path of the tape to be adhered to the work piece.” As recited in MPEP 2141.02, “A prior art reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention.” *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). Moreover, MPEP 2146 recites that “It is improper to combine references where the references teach away from their combination.” *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). Since Ermert teaches away from programming, Ermert should not be combined with Milacron.

Accordingly, it is respectfully submitted that independent claims 5 and 8, and their dependent claims 6, 7, 9-31, respectively, are allowable over the cited reference. Hence, for at least these reasons, the undersigned representative respectfully requests that the rejection of claims 5, 8, 9, 15, 20, and 21 under 35 U.S.C. §103(a) be withdrawn.

**Rejection of claims 5, 8-11, 15-18, 20, 21, and 27 under 35 U.S.C. 103(a)**

The undersigned representative respectfully traverses the rejection of claims 5, 8-11, 15-18, 20, 21, and 27 rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,382,836 to Frank (“Frank”) in view of Ermert and optionally Milcaron or alternatively over Ermert in view of Frank and optionally Milacron. Regarding the computer means, the Examiner asserts that:

Frank is silent as to using the tape applicator head as part of a computer controlled robotic arm system. However, the tape applicator head taught by Frank is designed to be mounted on any movable support such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to mount the tape applicator taught by Frank on any well known and conventional movable support for a tape applicator such as that shown for example by Ermert et

al. (Ermert et al. is described in full detail above) wherein the system taught by Ermert et al. provides benefits such as automatic control of the tape applicator.

Regarding the computer, as noted above Ermert et al. teach the computer may include a program for operating the robotic arm and tape applicator head attachment, it being noted any program including data for the proposed path of the tape would intrinsically include data respecting the shape of the work piece such that the limitations in claim 5 regarding the programmed data appears to be met. In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to operate the computer taught by Frank as modified by Ermert et al. (or Ermert et al. as modified by Frank) using a well known and conventional tape applicator program such as that optionally suggested by Milacron which includes data respecting the shape of the work piece and the proposed path of the tape as only the expected results would be achieved, i.e. the computer means would operate according to programmed data respecting the shape of the work piece and the proposed path of the tape to be adhered to the work piece.

As admitted by the Examiner, Frank is silent as to the computer means. Thus, the Examiner is relying on Ermert and/or the combination of Ermert and Milacron for teaching or suggesting the computer means as recited in claims 5 and 8 of the present application. As recited above, Ermert fails to disclose "computer means which includes programmed data respecting the shape of the work piece and the proposed path of the tape to be adhered to the work piece," as recited in claim 5 of the present application and similarly recited in claim 8. Moreover, as recited above it is improper to combine the teachings of Ermert and Milacron.

Accordingly, it is respectfully submitted that independent claims 5 and 8, and their dependent claims 6, 7, 9-31, respectively, are allowable over the cited reference. Hence, for at least these reasons, the undersigned representative respectfully requests that the rejection of claims 5, 8-11, 15-18, 20, 21, and 27 under 35 U.S.C. §103ab) be withdrawn.

**Rejection of claims 12 and 13 under 35 U.S.C. 103(a)**

The undersigned representative respectfully traverses the rejection of claims 12 and 13 rejected under 35 U.S.C. §103(a) as being unpatentable over Ermert, Frank, and optionally Milacron and in further view of U.S. Patent 4,885,981 to Roettger *et al.* ("Roettger"). Since claims 12 and 13 are dependent on allowable claim 8 and since Roettger does not cure the

deficiencies of the cited art with respect to claim 8, claims 12 and 13 are patentable over the cited art for the reasons recited above with respect to claim 8. Therefore, the undersigned representative will not address the arguments with respect to these claims and reserves the right to address these arguments at a later time.

For at least these reasons, claims 12 and 13 are patentable over the cited art. Accordingly, it is respectfully requested that the rejection of claims 12 and 13 under 35 U.S.C. §103(a) be reconsidered and withdrawn.

**Rejection of claim 6 under 35 U.S.C. 103(a)**

The undersigned representative respectfully traverses the rejection of claim 6 rejected under 35 U.S.C. §103(a) as being unpatentable over Ermert as applied above, or Ermert and Milacron as applied above or Ermert, Frank, and optionally Milacron and in further view of U.S. Patent 5,342,647 to Heindel *et al.* ("Heindel"). Since claim 6 is dependent on allowable claim 5 and since Heindel does not cure the deficiencies of the cited art with respect to claim 5, claim 6 is patentable over the cited art for the reasons recited above with respect to claim 5. Therefore, the undersigned representative will not address the arguments with respect to these claims and reserves the right to address these arguments at a later time.

For at least these reasons, claim 6 is patentable over the cited art. Accordingly, it is respectfully requested that the rejection of claim 6 under 35 U.S.C. §103(a) be reconsidered and withdrawn.

**New Claims**

Claims 32-37 are added by this amendment. Claims 32 and 35 are directed towards the applied tape fastening two work pieces together. Claim 33 and 36 are directed towards the work pieces being parts of vehicles. Claims 34 and 37 are directed towards the proposed paths including one or more curved sections. The art cited by the Examiner does not teach or suggest these limitations. For example, the cited art discloses applying tape onto a part in a straight path to reinforce the part, such as an airplane wing. Thus, the tape is not used to join the part with another part nor is tape applied along a curved (e.g., see Figure 4 of Ermert where the tape is applied along a straight path).

**CONCLUSION**

The foregoing is submitted as a full and complete Response to the non-final Office Action mailed April 7, 2005, and early and favorable consideration of the claims is requested. If the Examiner believes any informalities remain in the application which may be corrected by Examiner's Amendment, or if there are any other issues which may be resolved by telephone interview, a telephone call to the undersigned attorney at (202)508-5843 is respectfully solicited.

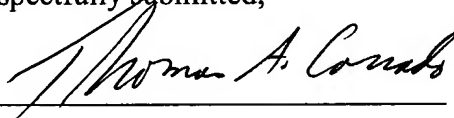
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Dated: \_\_\_\_\_

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